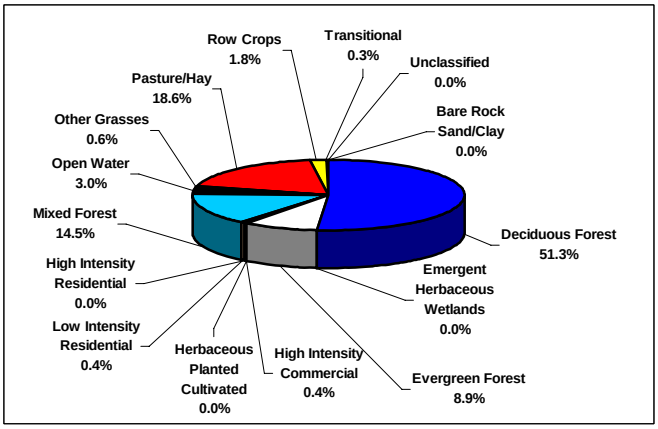
Summary – Powell River Watershed

In 1996, the Tennessee Department of Environment and Conservation Division of Water Pollution Control adopted a watershed approach to water quality. This approach is based on the idea that many water quality problems, like the accumulation of point and nonpoint pollutants, are best addressed at the watershed level. Focusing on the whole watershed helps reach the best balance among efforts to control point sources of pollution and polluted runoff as well as protect drinking water sources and sensitive natural resources such as wetlands. Tennessee has chosen to use the USGS 8-digit Hydrologic Unit Code (HUC-8) as the organizing unit.

The Watershed Approach recognizes awareness that restoring and maintaining our waters requires crossing traditional barriers (point *vs.* nonpoint sources of pollution) when designing solutions. These solutions increasingly rely on participation by both public and private sectors, where citizens, elected officials, and technical personnel all have opportunities to participate. The Watershed Approach provides the framework for a watershed-based and community-based approach to address water quality problems.

Chapter 1 of the Powell River Watershed Water Quality Management Plan discusses the Watershed Approach and emphasizes that the Watershed Approach is not a regulatory program or an EPA mandate; rather it is a decision-making process that reflects a common strategy for information collection and analysis as well as a common understanding of the roles, priorities, and responsibilities of all stakeholders within a watershed. Traditional activities like permitting, planning and monitoring are also coordinated in the Watershed Approach.

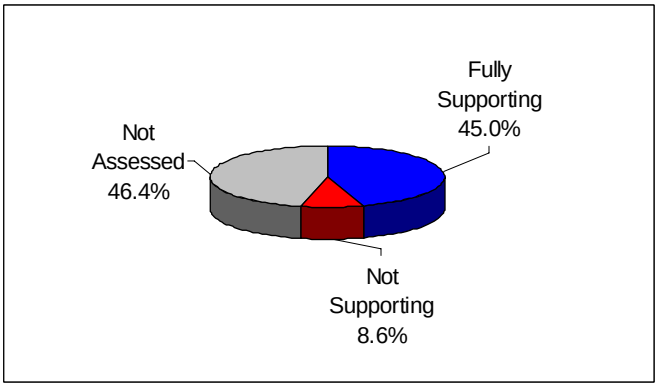
A detailed description of the watershed can be found in Chapter 2. The Powell River Watershed is approximately 954 square miles (402 mi^2 in Tennessee) and includes parts of four Tennessee counties. A part of the Tennessee River drainage basin, the watershed has 429 stream miles Tennessee.



Land Use Distribution in the Tennessee Portion of the Powell River Watershed.

One National park, one designated state natural area, and one wildlife management area are located in the watershed. Seventy-four rare plant and animal species have been documented in the watershed, including six rare fish species, eighteen rare mussel species, one rare snail species, and one rare crustacean species. A portion of one stream in the Powell River Watershed is listed in the National Rivers Inventory as having one or more outstanding natural or cultural values.

A review of water quality sampling and assessment is presented in Chapter 3. Using the Watershed Approach to Water Quality, 285 sampling events occurred in the Powell River Watershed in 2000-2005. These were conducted at ambient, ecoregion or watershed monitoring sites. Monitoring results support the conclusion that 59.2% of stream miles assessed fully support one or more designated uses.



Water Quality Assessment of Streams and Rivers in the Powell River Watershed. Assessment data are based on the 2004 Water Quality Assessment of 429 stream miles in the watershed.

Also in Chapter 3, a series of maps illustrate overall use support in the watershed, as well as use support for the individual uses of Fish and Aquatic Life Support, Recreation, Irrigation, and Livestock Watering and Wildlife. Another series of maps illustrate streams that are listed for impairment by specific causes (pollutants) such as pathogens, habitat alteration, and nutrient enrichment, and siltation.

Point and Nonpoint Sources are addressed in Chapter 4. Chapter 4 is organized by HUC-12 subwatersheds. Maps illustrating the locations of STORET monitoring sites and stream gauging stations are also presented in each subwatershed.

HUC-10	HUC-12
0601020602	060102060202 (Wallen Creek)
	060102060203 (Powell River)
	060102060204 (Martin Creek)
	060102060205 (Mulberry Creek)
0601020603	060102060301 (Powell River)
	060102060302 (Russell Creek)
	060102060303 (Indian Creek)
	060102060304 (Powell River)
	060102060305 (Upper Norris Lake)
	060102060306 (Middle Norris Lake)
	060102060307 (Davis Creek)
	060102060308 (Lower Norris Lake)

The Tennessee Portion of the Powell River Watershed is Composed of twelve USGS-Delineated Subwatersheds (12-Digit Subwatersheds).

Point source contributions to the Tennessee portion of the Powell River Watershed consist of four individual NPDES-permitted facilities, one of which discharges into streams that have been listed on the 2004 303(d) list. Other point source permits in the watershed are Tennessee Multi-Sector Permits (13), Mining Permits (5), Concentrated Animal Feeding Operation Permits (2), and Aquatic Resource Alteration Permits (1). Agricultural operations include cattle and sheep farming. Maps illustrating the locations of permit sites and tables summarizing livestock practices are presented in each subwatershed.

Chapter 5 is entitled *Water Quality Partnerships in the Powell River Watershed* and highlights partnerships between agencies and between agencies and landowners that are essential to success. Programs of federal agencies (Natural Resources Conservation Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, U.S. Army Corps of Engineers, National Park Service, and Tennessee Valley Authority), and state agencies (TDEC/State Revolving Fund, TDEC Division of Water Supply, Tennessee Department of Agriculture, and Virginia Department of Environmental Quality) are summarized. Local initiatives of organizations active in the watershed (The Nature Conservancy and Clinch-Powell RC&D Council) are also described.

Point and Nonpoint source approaches to water quality problems in the Powell River Watershed are addressed in Chapter 6. Chapter 6 also includes comments received during public meetings, links to EPA-approved TMDLs in the watershed, and an assessment of needs for the watershed.

The full Powell River Watershed Water Quality Management Plan can be found at: http://www.state.tn.us/environment/wpc/watershed/wsmplans/